

## **REMARKS/ARGUMENTS**

The Applicants have carefully considered this application in connection with the Examiner's Action and respectfully request reconsideration of this application in view of the foregoing amendment and the following remarks.

The Applicants originally submitted Claims 1-20 in the application. Presently, the Applicants have amended Claims 1, 9 and 18 and have neither amended, canceled nor added any other claims. Accordingly, Claims 1-20 are currently pending in the application.

### **I. Rejection of Claims 1, 2, 5, 7-11, 14 and 16-20 under 35 U.S.C. §102**

The Examiner has rejected Claims 1, 2, 5, 7-11, 14 and 16-20 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,794,272 to Turner, *et al.* ("Turner"). Newly amended independent Claims 1, 9 and 18 currently recite a contact plug located in a via, wherein the contact plug has a first portion having a notch removed therefrom and a second portion filling the notch, and wherein a geometric shape of a cross-section of the second portion is non-conformal to a geometric shape of a cross-section of the via. Turner fails to disclose the elements recited in independent Claims 1, 9 and 18.

Turner, in contrast to the present invention, is directed to wafer thinning using magnetic mirror plasma. (Title). Turner, as shown in FIGUREs 2A-2C, discloses that a via 33 may be formed in a substrate 32, and that a dielectric layer 34 may be conformally formed in and along the sidewalls of the via 33. Turner then discloses that a metal layer 36 may be conformally formed along the sidewalls of the dielectric layer 34, and a filler 38 may fill the via 33. Nevertheless, because of the nature of the manufacturing of the different layers, a cross-section of any one of the via 33, dielectric

layer 34, metal layer 36 or filler 38 would each have identical geometric shapes. Independent Claims 1, 9 and 18, however, require that a geometric shape of a cross-section of the second portion of the contact plug is non-conformal to a geometric shape of a cross-section of the via. Turner fails to disclose this element.

Therefore, Turner does not disclose each and every element of the claimed invention and as such, is not an anticipating reference. Because Claims 2, 5, 7-8, 10-11, 14, 16-17 and 19-20 are dependent upon Claim 1, 9 and 18, Turner also cannot be an anticipating reference for Claims 2, 5, 7-8, 10-11, 14, 16-17 and 19-20. Accordingly, the Applicants respectfully request the Examiner to withdraw the §102 rejection with respect to these Claims.

## **II. Rejection of Claims 3, 4, 6, 12, 13 and 15 under 35 U.S.C. §103**

The Examiner has rejected Claims 3, 4, 6, 12, 13 and 15 under 35 U.S.C. §103(a) as being unpatentable over Turner. As disclosed above, newly amended independent Claims 1, 9 and 18 currently recite a contact plug located in a via, wherein the contact plug has a first portion having a notch removed therefrom and a second portion filling the notch, and wherein a geometric shape of a cross-section of the second portion is non-conformal to a geometric shape of a cross-section of the via. As established above, Turner fails to disclose this recited element.

Additionally, Turner also fails suggest this recited element. Turner fails to suggest this recited element because turner discloses a specific method for manufacturing its vias and associated layers that could not and would not provide a structure wherein a geometric shape of a cross-section of the second portion of the contact plug is non-conformal to a geometric shape of a cross-section of the via. Accordingly, Turner fails to suggest this recited element.

Thus, Turner fails to teach or suggest the invention recited in independent Claims 1, 9 and 18 and their dependent claims, when considered as a whole. Accordingly, Turner fails to establish a prima facie case of obviousness with respect to these claims. Claims 3, 4, 6, 12, 13 and 15 are therefore not obvious in view of Turner.

In view of the foregoing remarks, the cited reference does not support the Examiner's rejection of Claims 3, 4, 6, 12, 13 and 15 under 35 U.S.C. §103(a). The Applicants therefore respectfully request the Examiner withdraw the rejection.

### III. Conclusion

In view of the foregoing amendment and remarks, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 1-20.

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application.

Respectfully submitted,

Hitt Gaines, P.C.

A handwritten signature in black ink, appearing to read 'G. H. Parker', written over the printed name.

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